RESPONSE

In view of the following remarks, the Examiner is respectfully requested to withdraw the rejections and allow Claims 1-15 and 21-25 the only claims pending and currently under examination in this application.

Formal Matters

Claims 1-15 and 21-25 are pending after entry of the amendments set forth herein.

Claims 1-15 and 21-25 were examined. Claims 1-15 and 21-25 were rejected. No claims were allowed.

Claims 1, 2, 21, and 22 has been amended. Support for the amendment can be found in the claims as originally filed and throughout the specification at, for example: page 5, lines 1-3 and page 7, lines 15-23, and Figures 1-3.

As the above amendments introduce no new matter to the application, their entry is respectfully requested.

Rejection under 35 U.S.C. §103

Claims 1-15 and 21-25 have been rejected under 35 U.S.C. §103 (a) for allegedly being rendered obvious by Yang et al. (U.S. Patent No. 5,006,421). In view of the amendments to the claims and the remarks made herein, this rejection is respectfully traversed.

In the spirit of expediting prosecution and without conceding as to the correctness of the rejection, claims 1 and 21 have been amended to recite "a rigid frame supporting a tensile diaphragm comprising a nanopore". The amendment further emphasizes the structural difference between the claimed invention and the prior art.

In contrast to the claimed invention, the cited reference is directed to a diaphragm structure for measuring the speed and or amount of gas over a sensor (Column 4, lines 53-56). The disclosed diaphragm comprises two layers including a silicon dioxide layer and a silicon nitride layer, where it is possible to offset the

compressive stress exhibited by silicon dioxide and the tensile stress exhibited by silicon nitride to lower the overall stress of the structure. The **cited reference does not teach or suggest that the disclosed structure includes a nanopore**.

The Office Action asserts that the cited reference teaches a diaphragm structure comprising layers of silicon nitride and silicon dioxide. In addition, the Office Action also asserts that the structure is a nanopore (Office Action, page 2). However, the Applicants respectfully disagree. The cited reference does not teach a nanopore

In support, the Office Action cites column 4, lines 32-55 as providing the teaching of a nanopore:

> Referring to FIG. 1, there is shown a diaphragm structure, generally referenced 2, having an area 4 containing integrated circuitry 6 and an upper surface 8 supporting a heater element 10. While the following description is in connection with the element 10 comprising a metallization system of the invention being a heater element as part of an air-flow sensor, preferably a hot-wire anemometer, it will be appreciated that the present invention is equally applicable to other sensor elements, such as a bridge structure 12 and/or a cantilever structure 14, shown schematically in FIG. 1. The mass air flow sensor shown in FIG. 1 comprises a diaphragm portion 16 which is comprised of at least 2 layers, one layer being typically of silicon dioxide and the other typically being of silicon nitride. Preferably, the portion 16 comprises three alternating layers of silicon oxide, silicon nitride and silicon oxide. By forming alternating layers of oxides and nitrides, it is possible to offset the inherent compressive stress exhibited by silicon oxide and the inherent tensile stress exhibited by silicon nitride to produce a laminated diaphragm layer with an overall low stress. This results in increased sensitivity and flexibility, so that the measurement of the speed/amount of a gas over the sensor can be accurately effected. The diaphragm structure shown in FIGS. 1 and 2 is formed by conventional back-side etching techniques, such as are reviewed in the above-mentioned paper to Lee et al, and so further discussion here is believed to be unnecessary.

However, nowhere in the cited passage or anywhere else does the cited reference teach or suggest a tensile diaphragm comprising a nanopore as claimed in the present application. In fact, the teaching a nanopore within the diaphragm of the cited reference would be contrary to the disclosure because the cited passage, as well as the rest of the reference, discusses measuring the speed and or amount of gas **over** a sensor. In particular, the sensor elements (including the bridge structure 12 and/or a cantilever structure 14) for measuring gas over the sensor are positioned on the top of the structure (see Fig. 1 and column 4, lines 40-43). Therefore, there is no teaching of placing a nanopore through the tensile diaphragm as claimed in the present application.

As such, the cited reference does not teach each and every limitation found in the claims. In particular, the cited reference fails to teach a structure wherein the tensile diaphragm includes a nanopore.

Therefore, since the cited reference fails to teach each and every element of the claims, the Applicants respectfully request that this rejection be withdrawn.

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CONCLUSION

The Applicants respectfully submit that all of the claims are in condition for allowance, which action is requested. The Commissioner is hereby authorized to charge any underpayment of fees associated with this communication, including any necessary fees for extensions of time, or credit any overpayment to Deposit Account No. 50-1078.

Respectfully submitted,

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